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ABSTRACT

The second draft of a companion document to the publication "Guidelines for School Libraries" sets forth guidelines and recommendations for media service programs. It outlines the staff, collections, and facilities that are required to implement those programs. Media services program patterns and their relationship to the curriculum are discussed, as are professional and support staff guidelines. Four sections are devoted to qualitative and quantitative Guidelines for media equipment and instructional materials. (DS)

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GUIDELINES FOR

MEDIA SERVICE PROGRAMS

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Pennsylvania Department of Education

GUIDELINES FOR

MEDIA SERVICE PROGRAMS

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FOREWORD

This is the second draft of a set of guidelines that were developed to serve as a companion document to the proposed revision of the Guidelines for School Libraries.

Three prime resources were used to develop these guidelines:

1. The new AECT-AASL Media Standards
2. Guidelines for the Establishment of Intermediate Units, PDE
3. Audio-Visual Equipment Standards (1974-75) PDE

These guidelines reflect as much as possible the new AECT-AASL material standards. The developers of this document recognized certain state problems and requirements that must be considered.

The existing guidelines for intermediate unit regional media resources are incorporated into these guidelines. In addition, the State Board of Education regulation require the PDE to establish standards for media equipment. These standards are also included.

This is a companion document to the Guidelines for School Libraries. The proposed revision of the Guidelines for School Libraries was not sufficiently comprehensive to cover a total educational media program at all levels of basic education in the Commonwealth.

The first draft was reviewed by the following:

1. State Advisory Committee on Audio-Visual Education
2. The State College and University Council on Instructional Systems and Technology
3. The Instructional Materials Services Program Specialists of the Intermediate Units
4. The Board of Directors of the Pennsylvania Learning Resources Association

Approximately 60 people reviewed the first draft and made comments and suggestions which the developing committee incorporated into a second draft.

It should be noted that in some cases the recommendations in the guidelines are not requirements except where they are specified by regulations or law.

GUIDELINES FOR MEDIA SERVICE PROGRAMS

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SECTION I

INTRODUCTION AND RATIONALE

This document sets forth guidelines and recommendations for media service programs and resources essential for quality education. The publication focuses on quantitative and qualitative goals, suggesting criteria for state, regional, district, and school media programs that make exemplary educational experiences available to children and youth. It describes programs designed to respond to both state, regional, district, and school objectives and reflects the vital interrelationships among those operations. The following quantitative statements provide corresponding guidelines for the staff, collections and facilities that are required to implement the programs. All of the recommendations apply to public schools. It is suggested that the non-public schools examine their own situations in light of this document.

The guidelines are stated with recognition of alternative choices that may better serve individual program requirements. However, it should be noted that levels of program operation and the resources to maintain them should be carefully evaluated. Any alternative that represents a reduction in program or in program resources is likely to result in impaired opportunities for learners.

Programs of media services are designed to assist learners to grow in their abilities to find, delineate, evaluate, and apply information that helps them to function effectively as individuals and to participate fully in society. Through the use of media, a student acquires and strengthens skills in reading, observing, listening and communicating ideas. He interacts with others, masters knowledges as well as skills, develops a spirit in inquiry, and achieves greater self motivation, discipline, and evaluation. With a quality media program, a school can challenge its members to participate in exciting and rewarding experiences that satisfy both individual and instructional purposes.

The media services program exists to support and further the purposes formulated by the state, region school or district of which it is an integral part. Its quality is judged by its effectiveness in achieving program purposes. A media service program represents a combination of resources including people, materials, machines, facilities, and environments, as well as purposes and processes. The combination of these program components and the emphasis given to each of them derive from the needs of the specific educational program. The more purposeful and effective the mix and the more sensitively it responds to the curriculum and the learning environment, the better the media service program.

A basic component of all media service programs is the human interchange among the media staff, between media staff and the administrative staff, between media staff and classroom teachers, and most of all, between the media person and student. Media personnel strive to build bridges between content and context, purpose and procedure, self and society. They apply to the achievement of learning objectives, a knowledge of the potential of various information sources--verbal, symbolic, pictorial, and environmental--as well as an understanding of different teaching and learning modes. This concept of program focuses on human behaviors and interactions, with staff members supporting students and teachers and all other users in utilization of media to achieve learning goals.

Activities of the media program should be considered in the light of four functions: design, consultation, information, and administration. These functions derive from the basic roles of media professionals and they are overlapping rather than discrete, penetrating all operations of the program and providing a basis for evaluating their efficiency. Each of them applies to all elements of the media program but not with equal force. In describing the functions, areas of special application are identified.

The design function relates to formulation and analyzing objectives; establishing priorities; developing or identifying alternatives; selecting among alternatives; and implementing and evaluating the system, the product, the strategy, or technique. In this context media professionals initiate and participate in curriculum design. Applications of the design function are interrelating and complementary, and are viewed as cooperative action rather than the prerogative of a single staff member.

The design functions include such areas as:

initiating and participating in curriculum development and implementation

to form instructional development processes

designing in-service education

planning and evaluating media service program

developing materials for self-instructional use by learners for specified objectives

designing multimedia persentations

determining the effectiveness or validity of instructional materials and sequences

The consultation function is applied as media professionals contribute to the identification of teaching and learning strategies; work with teachers and students in the evaluation, selection, and production of materials; and serve as consultants in planning and reordering physical facilities to provide effective learning environments.

Activities that are particularly affected by the consultation functions are:

planning and providing instruction in the use of the media center and its resources

developing user understanding of the strengths and limitations of various presentation forms

serving as instructional resources consultant and materials specialist

participating in curriculum development and implementation

the information function relates especially to providing sources and services appropriate to user needs and devising delivery systems of materials, tools, and human resources to provide for maximum access to information in all its forms.

Elements of the media program that are essential to the information functions include:

identifying users' needs for information

promoting functional knowledge of the variety of resources and approaches for obtaining information

providing access to information available from outside agencies, both public and private

translating information from one presentation form to another through production of materials

collecting, organizing, and supplying information on community resources

The administration function is concerned with the ways and means by which program goals and priorities are achieved. It applies to all aspects of the program and it involves staff and users in appropriate ways.

The administration function especially serves these program activities:

supervising media personnel

developing educational specifications for new facilities

establishing access and delivery systems

establishing and maintaining production services

developing budgets to support the program of services

coordinating the resources of agencies to support the media service program

SECTION II

MEDIA SERVICES PROGRAM PATTERNS AND RELATIONSHIPS

Curriculum design and media utilization are inextricably interwoven. To the learner, media helps to identify the problem, supply information and method to solve it, and offer techniques to evaluate the variables. Purposeful integration of curriculum and media is ongoing and open-ended, with media professionals, curriculum consultants, teachers, and learners jointly designing instructional systems in which content and method evolve together. This process of scientific instructional design results in a more effective allocation of both the human and the material resources of the educational program.

Effective curriculum realization requires the interaction of media programs at every level--state, region, district, school---and even further-reaching associations as technology makes possible.

The State Media Program

The state is legally responsible for establishing and maintaining a system of education, and the education agency prescribed by its legislature provides leadership in the area of media programs.

The State Board of Education generates creative policies for media and is responsible for making recommendations for legislative action that insure the provision of resources necessary for media program development. Such policies are implemented in the State Department of Education by media staff functioning as a unit which encompasses the total resources of educational technology, including instructional telecommunications.

The primary responsibilities of the media program in the Department of Education are the interpretation and implementation of rules and regulations of the State Board of Education and state and federal laws and regulations and the policies of the Secretary of Education relating to media in the education program including:

planning for effective media service programs

developing guidelines for media service programs

making budget recommendations based upon needs assessment

developing guidelines for administration of federal and state funds related to media

providing consultative service for program and staff development for the State Department of Education, intermediate units, school districts, professional associations, and lay groups interested in media

organizing and encouraging leadership development programs

establishing criteria to assist local school districts and intermediate units in evaluating media

producing instructional materials not available from other sources

planning state telecommunications

evaluating media service programs at all levels

collecting, analyzing, and disseminating information to the Secretary of Education, the State Board of Education, State Department of Education staff, state legislators, congressmen, intermediate units, local school districts and the general public

planning and developing research programs relating to media coordinating activities with other units of the State Department of Education, such as research, curriculum, and planning units

Participating in the development of certification requirements for media personnel

assisting with planning for media education in state colleges and universities

working with state and national groups such as professional associations, public libraries, the state library, broadcasting councils, and the U.S. Office of Education

Promote exemplary professional practices in intermediate unit, district, and school programs

Provide media support services to state department staff

School districts and intermediate unit programs call upon the services of the state media services program unit to strengthen the programs at the intermediate unit district and school levels; likewise, state media service program exert leadership in establishing and maintaining educational technology in its best and most efficient forms in intermediate unit, district and school programs.

Regional Media Programs (Intermediate Unit/ Instructional Materials Service)

The purpose of instructional materials services in the intermediate units is to plan and operate a support system for instructional materials in component districts and to advise district personnel on the proper use of these materials. The support system should avoid duplication of effort in the school district and provide materials and services not economically feasible at the local level. The service should also introduce new methods and materials and determine the most effective level of distribution.

The instructional materials services staff should provide leadership, coordination and expertise within the unit area concerning educational communications and technology, and it should serve as a liaison between district personnel involved in educational communications and their counter parts in the State Department of Education.

The staff should involve itself in the creation and development of services in response to local needs and it should maintain continous assessment of the unit's overall instructional materials program.

Specific instructional materials services may include:

distributing all forms of educational media which can be economically allocated at a regional level

consulting with intermediate unit staff members, teachers and administrators to provide expertise in designing media facilities, selecting equipment and materials, and the development of media programs at the district level

providing effective in-service training in all forms of instructional media to professionals and nonprofessionals

providing technical services which may include repair and maintenance of audio-visual equipment and electronic systems such as projectors, TV receivers and monitors, language labs, dial access systems, P.A. systems, closed circuit TV, etc.

producing materials such as slides, tapes, transparencies, and graphics at districts' requests. Printing services for districts may also be part of this service

coordinate intermediate unit regional activities relative to educational technology and communications

acting as intermediate unit liaison with the State Department of Education instructional media services personnel, in regional activities related to educational broadcasting, with community groups on projects related to instructional media services, and with other staff members of the intermediate unit on cooperative or joint projects.

District Media Service Programs

Technological potential in a school district is best realized when the instructional applications of media and technology are placed under the administrative structure of a district media service program. This program assumes responsibility for deployment of the total resources of instructional technology in the manner that best serves the educational goals of the district. The organizational structure places the director of the district media services program in a key role of decision making related to setting overall goals, analyzing curriculum, in selecting instructional modes, and in establishing and maintaining responsible evaluative processes.

The responsibilities of the district media program include but are not limited to:

planning the overall media services program, e.g., identifying criteria, purposes, procedures, and evaluation systems

developing and coordinating the budget for the total media services program and creating and maintaining accountability techniques

applying instructional technologies to curriculum development activities

selecting personnel for the district media services program and providing for its ongoing professional development

orienting the district staff in all aspects of instructional technology

applying appropriate forms of telecommunications such as television, radio, telephone lines, computers, and random access distribution systems to the instructional program

providing professional support to district and building staffs in the area of instructional development as it relates to instructional technology

developing district policies to guide media selection and support relative to intellectual freedom

developing criteria for the selection of materials and equipment

maintaining or supervising the maintenance of media and quipment

producing materials and maintaining production facilities

selecting, distributing, and effectively promoting the use of district collections of materials and equipment

designing school and district media program facilities

interpreting the media program to school and community and developing public information systems

coordinating media service from the regional (Intermediate Unit) and state levels

In order to carry out these responsibilities, the district media services program, operating as an administrative sub-unit, is placed in a direct line relationship to the superintendent's office. The head of the district media service program may be a supervisor of media services, or consultant for the media services but regardless of designation, the person is a participating member of governing committees and councils that determine the policies and criteria of the total educational program.

All district media personnel are responsible to the director who develops staff positions and corresponding job descriptions to implement such activities as consultative services, coordination of individual school media service programs, telecommunications, administration of district media collections, and district production of media. Each of these activities, to be fully developed, is headed by a media professional who is certified when applicable.

Wide variations occur in the program requirements within the district--schools serving different interests and levels of maturity, schools for children with handicaps and learning disabilities, schools for gifted children, and special purpose schools. Program elements are individually designed and evaluated on the basis of user needs and interests. The district media service program seeks to accommodate and support program adaptations, encouraging the greatest possible flexibility within the parameters of effective district management. However, the district media service program has the responsibility of seeing that the school level programs develop to their potential.

School Service Building Media Program

The school building media service program functions within the district media service program as well as performing as an integral part of the school's educational administration structure. It reflects different levels of emphasis upon specific program elements. The school building service program stresses direct service to students and teachers, media collections development, and instructional design that fulfills the educational goals of the school. The school building media service program carries out at the building level the aims of the district media service program, drawing effectively on its resources. As an example, the school building program conducts staff development activities, calling upon the services of district professionals as needed. Likewise, media production activities in individual schools may be complemented by more sophisticated district production services. Telecommunications activities by nature of their function are centered in the district program but are channeled into or coordinated with the school building media service program.

The school building media service program is conducted under the direction of an instructional media specialist with a knowledge of education and with leadership and managerial competencies, who is designated as head of the school building media service program. The position is placed on a direct line relationship to the principal's office. The head of a school building media service program has a role equal to the assistant principal or building curriculum supervisor and is a participating member of the committees and councils that determine the policies and curriculum practices of the school.

The responsibilities of the school building media program include but are not limited to:

defining the purposes of the school building media service program with proposed implementation and evaluation to achieve them

planning media program activities and integrating them with other programs of the school

participating in instructional design, course development, and the creating of alternative modes of learning

developing budget criteria and budget as required by the school administrators and the direct media director

developing and servicing a balanced, relevant collection providing maximum access to collections in the school, district, region, state and community

operating the media center with procedures that further the goals of the school

reporting to the district director, school administrator, and to teachers and students relative to the school media program

conducting orientation and in-service education in media for the school media staff and teachers

providing production facilities and expertise in production suitable at the school level

developing flexible operations that encourage and support users in problem solving, interest fulfillment, and creative expression

initiating and providing program activities that respond to curriculum goals on a day-by-day basis

providing opportunities for discovery and exploration independent of or beyond the stated curriculum

maintaining professional resources for teachers, informing them about new materials, and involving them in purchasing decisions

performing ongoing evaluations in the light of stated objectives and making program modifications as needed

building a public relations program that communicates the role of the school building media service program and its contribution to the goals of the school

SECTION III

Personnel

Two basic classifications of personnel
Professional Staff
Support Staff

Professional Staff

The word professional identifies abilities, skills, and knowledges including appropriate academic preparation in one or more areas of educational technology, or library and information science.

Media Specialist

A media specialist has broad professional preparation in education and media, has the appropriate certification as an Instructional Media Specialist or Supervisor of Instructional Media, and possesses the competencies to initiate and implement a media services program. The media specialist should hold a master's degree in media from a program that combines educational communications and technology, curriculum development and library information science.

Other Media Professionals

Other media professionals are those who have academic preparation and experience in an area of educational technology, such as instructional development, television, media design and production, programmed instruction or in an area of library and informational science. The media professional must have certification in the area of his preparation if applicable.

Support Staff

The support staff is made up of media technicians and media aides. These persons are responsible to the media professionals. Preparation for these positions is required either by specialized training or on-the-job experience. The number of such support staff is dependent on the size of the media program and should increase with the expanding of the media program.

Media Technician

Media service programs require personnel with a variety of technical qualifications, training, and experience in particular fields. Technicians have competencies in one or more fields such as graphics productions and display, information and materials processing, photographic production, operation and maintenance of instructional equipment, television production, and installation of system components.

Media Aides

Media aids working directly with users must be able to respond effectively to their needs. They carry out all tasks under the direction of the professional member of the media staff, reporting, as appropriate, to designated professionals or technicians. Aides have secretarial and clerical competencies that enable them to perform tasks related to the ordering, receipt, maintenance inventory, production, circulation, and utilization of materials and equipment.

DISTRICT MEDIA STAFF AND RESPONSIBILITIES

The size of the district and the scope of its program determine the number and range of media staff positions. The staff reflect the professional, technical, and clerical competencies required to implement all of the program elements.

The staff worksunder the direction of the supervisor of Instructional Media with participatory management practiced by delegating authority and responsibility to subordinate levels where decisions can be made effectively and with proper accountability. Management systems insure participation by clear delineation of positions and lines of communication and responsibilities.

Cooperation among school districtsinfluences staffing needs. It is unrealistic for every school district to attempt to provide by itself the full range of media program elements needed for teaching and learning. Intermediate Unitsthrough Instructional Materials Service programs can assist school districts by providing services such as film libraries, tape duplication, repair services and other services that are too costly for each school district to maintain. Other cooperative efforts can be through regional curriculum laboratories, media selection centers, regional broadcasting councils and state support services.

District Media Director (Supervisor of Instructional Media)

The district media services director is a certified media professional chosen on the basis of breadth of knowledge and experience in media programs; managerial, adminstrative, and supervisory competencies; and concern for the fulfillment of the purposes of education. The person occupies the key position in bringing to the educational program the full application of media and technology.

The district media service director should be certified as an Instructional Media Specialist-Supervisor of Instructional Media.

District Staffing Patterns

Because of the many variables within school districts, a specific organization of operations and staff components are not presented here. In small districts some operations and staff responsibilities are combined and/or provided on a contractural basis with other districts or agencies. Large districts maintain more extensive operations, but may also find it advantageous to provide some program elements through contractural arrangements or utilization of regional or state-level services.

District media services program activities are directed by a media professional who provides leadership for the development of district level and individual school media service programs. Additional professional media personnel, including instructional media specialists, are employed as needed to administer specific program operations. The professional staff is supported by sufficient secretarial staff.

Consultative service and staff development. Competent advice and assistance in the development and utilization of media service programs are provided to the heads of school media service programs and other school personnel, including members of the district administrative staff, school administrators, media personnel, and teachers. Staff development programs are conducted for media staff and other school personnel.

District Wide Media Collections. Collections of videotapes, and other materials for loan to individual schools are administered under the direction of a media professional assisted by support staff (booking clerk, film inspectors, distribution clerks) as needed. The staff is adequate in number and variety of competencies to insure that users have convenient and timely access to titles in the collection and that no more than twenty-four hours is required for the return, inspection, and redistribution of materials. Factors influencing the size of staff include the number of schools/teachers/students served, geographic characteristics of the district, size of the collection, booking procedures, and technology used.

16mm motion pictures are normally an Instructional Materials Service of the Intermediate Units distribution due to the economics of the situation.

Professional library. The professional library for the district is administered by professional staff and media aides. The number of users, the scope and depth of services provided such as handling telephone requests and performing research and abstracting services, and provisions for extended hours of operation, determine the number of persons that are needed.

Equipment services. Equipment services provided at the district level include evaluating and maintaining equipment, distributing specialized equipment on loan to individual schools, and lending temporary equipment to cover for items being serviced or repaired. The equipment program is administered by a media professional. Additional professional staff may be required for equipment evaluation. Media technicians perform equipment maintenance, unless it is provided through contractual arrangements with commercial agencies.

Media technicians perform equipment maintenance in cooperation with the services provided through the Instructional Materials Service of the local Intermediate Unit.

Media production. Media production operating at the district level may include graphics, printing, photography, television and radio, and audio tape production services. These operations interrelate in terms of staff competencies. Coordination for productions services performed at the intermediate unit level should be handled at the district level.

SCHOOL MEDIA STAFF AND RESPONSIBILITIES

The size of the school and the scope of its program determine the extent of the school media services program staff. It reflects school organization such as the open school, department management in high schools, specialized services, and programs to accommodate and mediate learning disabilities and physical handicaps. It also is affected by the allocation of program activities and services between the district and the individual schools.

Responsibilities of the Head of the School Building Media Program

The head of the school building media services program is a certified Instructional Media Specialist selected on the basis of managerial and administrative competencies, coupled with a wide knowledge of media expertise in instructional design. This person is responsible for developing, administering, and implementing a full media program. In very large schools with media programs staffed by a full complement of media specialists and other media professionals, the head of the media center program may be a media professional other than an instructional media specialist. In such cases selection of the program head is based on the person's breadth of knowledge, experience and leadership capabilities.

STAFFING PATTERNS

Because of differences in size of school buildings and the scope and depth of media programs a specific organization of the school building media staff is not presented here, but basic program requirements call for professional personnel, technicians, and aids. The school building media staff must be competent to work with users with differing interests and needs; to respond to a wide span of instructional approaches; and to manage a variety of resources. When a single media specialist, supported only by technicians and aides, carries on the total media services program of a school, the person must have a wide spread of competencies and professional skills. School building media services programs employing two or more media professionals profit from selecting individuals who have complementary specializations, thereby increasing the capabilities of the program.

Employment of sufficient technical and clerical staff to work under the guidance of media professionals is essential to program realization and to promote efficient and economical staffing. Technicians and aides perform a variety of essential, time-consuming tasks, contribute to the efficient operation of the media program, and release professionals to work in the areas of their expertise.

Patterns of organization for instruction and systems of instructional technology influence the allocation of media staff responsibilities. Alternative approaches include assignment of staff to work with specified grade level, age level, or multiaged groups; with subject area specializations; with special sub-school organizations; or with specific blocks of instruction.

The program of a large school building may be extended by subject resource centers developed as satellites to the main media center. Each resource center requires a media professional with appropriate subject matter competencies.

The person is responsible to the head of the school media service program who provides support staff as needed and oversees and coordinates the program of satellite centers with the total school media program.

Size of Staff

Recommendations for size of staff for the school building media services program are influenced primarily by the number of users--students, teachers, and others--served by the school media program. Other variables that influence media staff needs include instructional approaches and emphases; patterns of school organization; provisions for resource centers as satellites to the main media center; media program operations in such areas as television production and materials design and production; services provided by the district media program; and the level of use of the media program and its resources.

The professional staff, consisting of the Instructional Media Specialist who serves as head of the school media service program and other media professionals as needed, is sufficient in number and variety of competencies to insure that the media program is planned carefully and implemented fully; that resources for teaching and learning are selected wisely and are made easily accessible; and that individualized media services to students and teachers are provided in optimum measure.

It is recommended that school buildings with an enrollment of 250 have a specialist. Additional professional staff members are recommended to respond to the needs of users in schools with larger enrollments and to provide a full range of media services. One full-time media professional for every 250 students (or major fraction thereof) can implement a fully developed media program. This figure is recommended rather than prescribed, but it should be noted that it is based on analyses of tasks to be performed and the time required to perform them.

New school buildings require media programs comparable to those recommended for established school buildings. To have the media center in full operation when the new school opens requires advanced planning with sufficient time and funds provided for this purpose. Appointment of a full time instructional media specialist and media aide to work a year in advance of the opening of a new school is essential.

Personnel requirements vary with circumstances. School buildings with enrollments exceeding 2,000 students may find it possible to achieve a full complement of professional competencies and satisfy users' needs with less than one professional for every 250 students. In other schools, the number of instructional media specialists and other media professionals may need to be increased because of such factors as a student body with special learning problems, provisions for satellite resource centers, and emphasis on such media production services as graphics, radio, television. Very small schools with one and two teachers in sparsely populated areas present unique problems in staffing. The school district needs to devise alternatives to the full-time staffing pattern.

Support staff of media technicians and media aides should be sufficient in size and in variety of competencies to insure that the media program operates efficiently; that sufficient technical and clerical skills required to perform particular media services are available; and that the time of media professionals is not usurped to perform support-level tasks.

Each school with an enrollment of 250 needs a full-time media aide and, in most cases, a full-time media technician. Two full-time support staff members for every 250 students (or major fraction thereof) are recommended to fully implement a well developed media program. This is based on an analysis of the tasks to be performed and the time required to perform them.

Adjustments in levels of support staffing or the ratio of aide to technicians respond to the needs of particular schools. The number of media technicians may be increased because of extensive media productions services and the number of aides increased to accommodate provisions for satellite resource centers.

SECTION IV

QUANTITATIVE GUIDELINES OF MEDIA EQUIPMENT

Introduction

The quantitative guidelines included in this section have been developed from various sources over the past years. The various national standards have been examined and these guidelines have been designed to fit a realistic view of the media equipment requirements of the Commonwealth schools. A teaching station is defined as a classroom or area designed for instructional purposes for students numbering from 15 to 40.

It should also be noted that these guidelines are based on the instructional format that is found in the majority of schools in the Commonwealth. Innovative changes in instructional format may require additional media equipment or different ratios.

Elementary and Secondary Education (K-12)

Projectors - Optical	Basic
Filmstrip or combination 2 x 2 slide and filmstrip projector	one per five teaching stations (Elementary)
2 x 2 35mm slide projector, automatic	one per 10 teaching stations (K-12)
Filmstrip projector with sound	one per three teaching stations (Elementary) one per instructional building (Secondary)
2¼ x 2¼ or 3¼ x 4 slide projector	one per district or one per auditorium when local slide production facilities are available
Overhead projector	one per three teaching stations (K-12)
Opaque projector	one per building (K-12)
Tachistoscopic projector	two per building (Elementary)
Micro-projector	one per building (Secondary) or as Science programs require
16mm sound motion picture	one per five teaching stations (K-12) except Modern Foreign Language when justified by program, one per classroom
Super 8mm silent motion picture reel to reel and/or cassette	one per 10 teaching stations (Elementary)
	one per five teaching stations (Secondary) (additional units in media center)

Projectors - Optical	**Basic**
Super 8mm endless loop motion picture	one per five teaching stations (K-12) (additional units in media center)
Super 8mm sound	one per 10 teaching stations (K-12)
Previewers	
Filmstrip previewers	one per two teaching stations (Elementary one per 10 teaching stations (Secondary) (additional units in media center)
2 x 2 slide previewers	one per five teaching stations (K-12)
Slide-sorter	one per building (K-12)
Projection Screens	
70 x 70 matte screen, stand or wall	one per teaching station (K-12)
Rear projection screens	as needed
Larger and smaller screens	larger screen in auditorium, smaller screen for individual and small group instruction (K-12)
Mobile Equipment Stands	
General purpose projection carts with electric cords attached	one per portable piece of equipment or as needed (K-12)
Television stand	see TV equipment
Audio Equipment	
Tape recorder, reel to reel	one per five teaching stations (Elementary) one per 10 teaching stations (Secondary) except Modern Foreign Language, one per teaching station
Cassette tape recorder, small group or individual. Battery and/or AC	one per teaching station (K-12) or as needed
Cassette tape recorder (foreign language)	see Listening Units and Electronic Learning Lab.

	Basic
Projectors - Optical	
Tape duplicating equipment	one per district
Record player	one per teaching station (K-3) one per teaching station (4-6) one per 10 teaching stations (7-12) except Modern Foreign Language, one per classroom
Listening unit, portable, six to eight headsets with jackbox	one per five teaching stations (K-12)
Portable sound amplifier for public address	one per building (K-12)
Radio AM/FM receiver	one per building (Elementary) three per building (Secondary) plus one battery type for emergency use (K-12) central distribution system
Stero Equipment	
Disc - Tape	as required by music program
Electronic Learning Lab.	
General	one per building when appropriate to instruction (K-12)
Language	one per building when appropriate to instruction (K-12)
Transparency Making Equipment	
Diazo	one per district (K-12)
Thermal	one per building (K-12)
Microform Readers and Printers	one per building (Secondary)
Microform Readers	as required by media center (Secondary)
Testing Grading Equipment	one per building (Elementary-Secondary)
Photographic	
Still	one 35mm camera per building (K-12)
Motion picture	one super 8mm camera per building (K-12)

	Basic
Television	
Closed circuit system	one per building (K-12)
Monitors	two per video tape recorder (K-12)
Receivers	two per teaching station (K-12)
Portable VTR system including two cameras	one per building (K-12)
Television stands	one per portable piece of equipment

Further Conditions:

Copyright Laws

It is the responsibility of the schools of the Commonwealth to become aware of and comply with the laws governing the recording and use of copyrighted materials.

Electronic Learning Labs

Modern wireless cassette type learning labs can be recommended when they meet cassette guidelines.

Light Control

Every classroom should have adequate light control. Adequate means the availability of facilities to control light to the extent that all types of projected media can be utilized effectively.

Radio

All sources of radio broadcast such as AM, FM, and FM-Multi-Plex should be available for central distribution.

Commercial/Cable TV

This type reception should be available to each school building. All new building construction should include provision for coaxial cable with double receptacles at each teaching station. Older buildings should be wired for closed circuit television so that:

Signals can originate from any teaching station to be distributed, if necessary, throughout the entire educational unit.

Any or all broadcast and video taped signals should be available simultaneously to all teaching stations.

Electrical Outlets and Circuits

A minimum of two double-grounded outlets at front and rear of all classrooms. Also, outlets should be easily available to all work tables or student laboratory desks and carrels. Each standard classroom shall have two separate AC electrical circuits.

Storage Space

It is recommended adequate storage space be provided and assigned to each item for central distribution. Special requirements for humidity compensation, light, dust and temperature control must be made regarding specific materials and equipment in the media center.

SECTION V

QUALITATIVE STANDARDS FOR MEDIA EQUIPMENT

Introduction

Section 9.31 (Standards) of the Regulations of State Board of Education requires the Secretary of Education to develop standards and specifications for all media equipment, including electronic and non-electronic, to be purchased with Federal and Commonwealth funds appropriated for such media equipment. The following standards have been established to meet the requirements of these regulations.

General Instructions

1. Operation manuals are required for all equipment.

2. The school district or intermediate unit should obtain from the manufacturer or his duly authorized representative a written guarantee containing the following:

   That the equipment offered for sale under these standards meet or exceed the standards in all respects. In addition to the above, furnish a list of names and addresses of service organizations.

Lamps

Lamps as stated in watts refer to conventional tungsten filament lamps. When stated "or equal" the reference is equal light output from a source other than tungsten such as Arc, Halogen, etc.

Lenses as required shall refer to special purpose as wide-angle or long distance.

Ventilation will be adequate for normal lamp life and disposition of heat.

Projectors (Optical)

Combination 2" x 2" Slide and Filmstrip Projector

Lamps: 500 watt minimum or equivalent.

Fan-cooled.
Lens as required
Accommodate filmstrip and 2" x 2" slides
Leveling adjustment
Optional: Semi-automatic or automatic slide carrier, carrying case, accessory lens, remote control, micro-attachment, tachistoscopic attachment, other equipment or functions required to improve the classroom utilization of the projector. When requested for small group or individualized instruction, the following standards apply:

a. Lamp: 75 watts tungsten or equivalent light output.
b. Fan or convection cooled.

Projectors (Optical) - continued

2" x 2" (35MM) Slide Projector

Lamp: 500 watts minimum or equivalent
Fan-cooled.
Lens as required
Leveling adjustment
Optional: Manual, automatic or remote control, slide trays, magazines or drums, remote extension cord, programming devices other devices required to improve the classroom utilization.

Filmstrip Projector

Lamp: Same as for combination 2 x 2 slide and filmstrip projector
Blower-cooled
Optional: remote control, automatic control, other devices required to improve the classroom utilization
When requested for small group or individualized instruction, the following standards apply:

a. Lamp: 75 watts tungsten or equivalent light output
b. Fan or convection cooled

2¼" x 2¼" or 3¼" x 4" Slide Projector

Lamp: 500 watts minimum or equivalent light output
Fan or blower-cooled
Operation: manual slide carrier, semi-automatic, or automatic carrier
Lens: as required
Optional: Manual, automatic or remote control, slide trays, magazines or drums, remote extension cord, programming devices (if justified), other devices required to improve the classroom utilization.

Overhead Projector

Projection area: 10" x 10" minimum aperture
Lens: as required
Lamp: 600 watts tungsten minimum or equivalent light output
Fan-cooled (thermal switch control).
Safety interlock switch
Optional: carrying case or cover, tool attachment (may be built into some models), tachistoscopic attachment, attachments to project various size slides, polarizer, adaptor unit for vertical demonstrations, especially designed units for teacher use.

Opaque Projector

Aperture: 10" x 10" minimum

Lamp: 1,000 watts tungsten or equivalent light output
Lens: as required
Fan-cooled
Focusing: rack and pinion, or methods approved by the Department of Education

Opaque Projector - continued

Pressure system for holding down copy must include heavy plate glass
Three-position or thermal switch
Optional: belt conveyor, optical pointer, cover trays.

Tachistoscopic Projector

Lamp: 500 watts minimum or equivalent light output
Fan-cooled
Lens: as required
Operation: may vary from manual through automatic and/or remote control
Adjustment for leveling
Optional: carrying case and other items necessary for improved classroom utilization.

16MM Sound Motion Picture Projector

Lamp: 750 watts minimum or equivalent light output
Amplification: 10 watts minimum at plus or minus five per cent or less distortion.
Optical sound
Fan-cooled
Will accept 2,000" reel
Optional: separate speaker, different sized lenses, cover and other items and functions required to improve classroom utilization.

Super 8MM Projectors (Silent)

Speeds: 18 frames per second
Lamp: 80 watts minimum or equivalent light output
Lens: as required
If the cartridge type, cartridge must be able to contain a minimum of 50' reel.

Super 8MM Film Loop Projector

Lamp: 150 watts or equivalent light output
Speed: 18 frames per second
Will utilize endless loop 50' cartridge

Super 8MM Sound Projector

Format approval will be determined based on needs

Rear Screen Projection Device

A variety of these devices is available, but it is preferable to purchase a unit that will utilize projectors already owned by the school

Mirrors should be coated on the front surface.
Provision must be made to conduct the exhaust of the projector be used directly to the outside of the cabinet.
The vendor must provide complete information as to the specific lens required to adapt each projector accommodated by this device.

Previewers

Filmstrip

Lamp: 6 watts minimum
Convection-cooled
Operation: manual advance
Magnification: 3 x-minimum

2" x 2" Slide

Lamp: 6 watts minimum
Convection-cooled
Magnification: 3 x-minimum

Projection Screens

70" x 70" Stand or Wall

It is considered that 70"x 70" screens are the most satisfactory for classroom projection of all types, particularly when overhead and opaque projectors are used.
Optional: keystone eliminator.

Sizes Other Than 70" x 70" Stand or Wall

Sizes other than 70" x 70" will be considered when sufficient justification as to the need is presented.

Mobile Equipment Stands

General Purpose Stands

Sturdy construction, preferably metal or metal reinforced.
Rubber casters not less than 4" in diameter, two with brakes.
Size to be suited to the type of equipment used.
Optional: cord assembly, screen carrier, rear-screen projection facilities.

Television Receiver Stands

Requirements listed under Television Equipment.

Audio Equipment

Tape Recorders (Reel to-reel and Playback)

Frequency response: 50-12,000 cps minimum at 7 ½" per second.
Design for continued heavy-duty use.
Built-in amplifier, 5 watts minimum.
Half-track.
Power: 115V., 60cy., AC.
Speeds: 3 3/4 and 7½ inches per second.
Accept 7" reels.

Tape Recorders (Reel-to-reel and Playback) continued

Fast forward and fast rewind.
Positive braking action.
Tape counter.
All components portable, in a single case of sturdy construction.
Speaker may be separate.
External female jack for head phones.
Optional: external speaker, external plug from pre-amplifier for tape duplication.

Cassette Record/Playback Minimum Standards (Individualized and/or Small-group Instruction)

Circuitry: Solid State.
Speed: 1 7/8 IPS, capstan drive.
Channels: Two monaural.
Fast Forward and Rewind Time: Less then 75 seconds for 30 minutes of playing time.
Recording Time: Capable of 120 minutes.
Power: DC and 117 V. AC
Wow and Flutter: 0.4 RMS.
Audio Input: Microphone and auxiliary.
Audio Output: Internal speaker and earphone plug (phone plug disables speaker).
Frequency Response: 100 Hertz to 8,000 Hertz.
Signal-to-noise Ratio: 43d6
Record Level: Manual (automatic recommended, but not required).
Playback Output: .25 Watt.
Speaker Size: No less than 2.5".
Indicators: Battery (Recond level - manual).

Cassette Recorder/Playback Minimum Standards (Classroom Instruction)

Circuitry: Solid State.
Speed: 1 7/8 IPS, capstan drive.
Channels: Two monaural channels or four stereo channels.
Fast Forward Rewind Time: Less then 75 seconds for 30 minutes of playing time.
Recording Time: Capable of 120 minutes.
Power: 117 VAC.
Wow and Flutter: 0.3 RMS.
Audio Input: Microphone and auxiliary.
Audio Output: External speaker and/or internal speaker.
Frequency Response: 80 Hertz to 10,000 Hertz.
Signal-to-noise Ratio: 45 d6
Record Level: Automatic or Automatic/Manual.
Playback Output: 5 Watts per channel.
Speaker Size: No less then 5".
Indicator: Record level (manual) playback level.

Audio Equipment - continued

Cassette Recorder/Playback Minimum Standards (For Use in Modern Foreign Language)

Circuitry: Solid State.
Speed: 1 7/8 IPS, capstan drive.
Channels: Two monaural channels or four stereo channels.
Fast Forward Rewind Time: Less then 75 seconds for 30 minutes of playing time.
Recording Time: Capable of 120 minutes.
Power: DC and 117 V. AC
Wow and Flutter: 0.3 RMS.
Audio Input: Microphone and auxiliary.
Audio Output: Internal speaker and earphone plug (phone plug disables speaker).
Frequence Response: 50 Hertz to 12,000 Hertz.
Signal-to-noise Ratio: 45 d6
Record Level: Automatic or Automatic/Manual.
Playback Output: .8 Watt.
Speaker Size: No less then 3".
Indicator: Battery ((Record level - manual).

Tape Duplicating Equipment - (Cassette and Reel to Reel).

The following minimum specifications shall be met or exceeded:
Speed 15 IPS.
S/N Ratio - 45 d6
Response - 50 to 12,000 Hertz 3 d6
Wow and Flutter - 0.25% maximum.
Power - 120 V - 60 Hertz.
UL - listed.

Record Player

Playback unit to have a minimum of four speeds.
Dual-Point turnover pick-up cartridge for standard and micro-groove records.
Accept up to 12" records.
Speaker: 5" minimum or equivalent.
Amplification: 10 watts minimum.
Manual operation.
Portable, single case of sturdy construction.
Speaker may be separate.
External female jack for headphones.
Optional: external speakers.

Transcription Player

Playback unit to have a minimum of four speeds.
Dual-point turnover pick-up cartridge for standard and micro-groove records.

Transcription Player - continued

Accept up to 16" transcriptions.
Speaker: 10" minimum or equivalent.
Amplification: 10 watts minimum.
Manual operation.
Portable, single case of sturdy construction.
Speaker may be separate.
External female jack for headphones.
Optional: external speakers.

Listening Unit

A unit consisting of a junction box, headphones, patch cords, carrying case, or the same items individually, for connecting varying numbers of headphones to a tape recorder or record player.

When purchased as an integral part of a tape recorder or record player, the tape recorder and/or record player must meet the requirements listed herein for such equipment.

Portable Sound Amplifier

All equipment in a single case of sturdy construction.
Speaker: 6" minimum or equivalent; may be separate.
Power Supply: 115 volts, AC or battery operated.
Amplification: 10 watts minimum, and a minimum frequency response of 100-10,000 cps, with plus or minus 3 per cent distortion.
Microphone: Adaptable for use as a fixed unit and as a "lapel" or "lavaliere" type for remote use, with a cord of adequate length for both purposes.
Optional: Reading lamp, lectern or rostrum-type single case unit.
External speakers.

Radio

General: single case, portable with carrying handle, plywood or material of equal strength and design for rugged classroom use. Plastic cases are not considered equal to plywood for classroom radios.
Type: AM and FM.
Antenna: built in.
Speaker: 6" minimum, front mounted.
Amplifier: 5 watts minimum.
Power: 115 volts AC.
Battery-powered models will be considered for approval where such portability is adequately justified.
Optional: 110-volt supply for battery models.
External speaker provisions.

Language Laboratories

Where the installation is to be used as a language laboratory, the equipment shall meet the standards described in paragraph 8, pages 115-119 (with references) of the United States Office of Education Bulletin OE 21024, more generally known as the Language Laboratory Facilities Technical Guide by Alfred S. Hayes.

Transparency Making Equipment

Diazo Process

Must produce a transparency of even density.
Must have an automatic timer.
Must assure even contact between master and film during exposure.
When the developing tank is contained within the transparency maker, it must be thermostatically controlled.
Where an ultraviolet light source is used, consistent results must be achieved for a given exposure and film.

Thermal Process

Must have a thermal control.
Must produce copy of even density.
Must ensure even contact between master and film during exposure.
Must make paper, transparent and thermal spirit and/or mimeo master pre-productions.

Photographic Equipment

Still Equipment

Equipment such as cameras, lenses, enlargers and lights is made in such a great variety of types for so many specialized purposes that it is impossible to write meaningful standards in detail.

35mm cameras must be of the single-lens reflex type. Exceptions will be made only when justified.

Motion Picture Equipment

The same as under Still Equipment.
16mm, 8mm, and Super 8mm cameras must be of the single-lens reflex type.

Television Equipment

Introduction

The following information is provided in order to assist those who seek to purchase television equipment. Minimum specifications and some guidance are provided for microscope, observation, limited studio and studio cameras for both monochrome and color standards.

Television cameras are generally sold under restricted franchises and the specification of manufacturers and manufacturer model numbers would result

Introduction - Continued

in very restricted bidding in some geographical areas. Other products such as monitors, lenses and camera mounting equipment is generally available to all dealers and unrestricted bidding can be expected on these products.

When purchasing television cameras be sure that you have selected the necessary optional accessories.

Changes from these specifications require approval of the Pennsylvania Department of Education.

In general, these are minimum specifications. Additional specifications should be added for special applications.

General Television Camera Specifications

The supplier shall provide a camera that meets the following specifications, unless otherwise specified.

Performance Specifications

The following specifications are defined, standardized and measured in Electrical Performance Standards for Closed Circuit Television Cameras, 252/60, Interlaced 2:1, EIA Standard RS330 dated November 1966, where standardized values or replacement values are specified below for monochrome cameras or the luminance channel of color cameras.

Output impedance	75 ohms ± 10 per cent ± 2 volts
Direct current in output	and 2 milliamperes maximum
Polarity	Black negative
Composite picture signal level	Blanked picture - 0.714 ± 0.1 volts
	Sync signal - 0.286 ± .05 volts
Geometric distortion	2 per cent of the picture height
Resolving power	Vertical - 325 lines minimum
	Horizontal - 550 lines minimum
Aspect ratio	4-to-3
Gray scale-logarithmic reflectance	10 shades
Signal-to-noise	40 db pp-to-rms
Shading error	0.2 volts maximum
Sync signal format	RS-330 Figure 1 or RS-170 Figure 3
Sync signal tolerance	± one per cent

The following specifications apply to color cameras only:

Encoded signal	NTSC compatible or
(choose)	FCC compatible
Resolving power	Horizontal - 400 lines minimum
Registration error	0.15 per cent within circle diameter
	80 per cent of picture height

The following specifications apply to color cameras only: - continued

Construction specifications

Cables required (R)*	One AC power: 15 feet minimum One video or RF: 25 feet minimum
Mounting surface	Standard threaded mounting plate
Lens mount	C-mount
Circuitry	Only solid state circuitry except for image tubes
Controls	On/off, gain, pedestal
Zoom lens operating controls (When zoom lens requested)	Zoom and focus: side or rear Iris: front
Viewfinder size (When viewfinder requested)	4-inch minimum
Viewfinder operating controls (Wen viewfinder requested)	Contrast and brightness
Talley lights locations (When studio camera requested)	Top and rear (R)
Intercom (When studio camera requested)	Party line

The equipment provided shall be durable enough to withstand normal classroom use and/or to perform the functions needed for the application.

Operating Enviornment;	
Power - monochrome	117 volts $\pm$ 10 per cent
color	117 volts $\pm$ five per cent 59 to 61 H_z
Temperature range	32 to 110 degrees F
Humidity range	0 to 95 per cent RH
Other Provisions;	
Training	The supplier shall provide four hours of operator training at the owner's location at a time agreeable to both.
Manuals	The supplier shall provide operating and service manuals containing a parts list and circuit diagrom.
Warranty	The equipment shall be new and free of defects of design and workmanship.
Warranty service	The supplier shall repair all defects found within one year of delivery and repair them at the supplier's repair shop and return the camera and accessories within seven days from receipt.

Microscope Television Cameras

Television can be used to magnify, display and record microscopic scenes. If the microscopic scenes are to be shown on standard television monitors, recorded on video tape or distributed on standard master antenna systems, then a 525-line scanning system should be used and the specifications for such television cameras are stated below.

High-resolution television microscopy is possible and should be used when there is a limited audience and special monitors are used. Such system operate on nonstandard scan systems.

Consideration will be given to high-resolution microscopy grant requests.

Microscope Television Camera System Specifications

Equipment to be Provided

Microscope television camera with:
Internal sync generator
Microscope adapter
(Optional-following items needing specifications):
Microscope
Microscope light
Camera stand
Television monitor and video cable or
Television receiver and RF cable
Internal RF modulator

General

The microscope television camera or camera system to be provided shall meet these specifications and the attached General Television Camera Specifications when assembled and interconnected.

The supplier shall mount the camera on the owner's microscope which is a (manufacturer and model) and perform with the owner's microscope light which is a (manufacturer and model).

The microscope television camera system shall meet (color or monochrome) specifications.

Special Performance Specifications

Mounting	The camera must operate with the microscope without causing defects or blemishes to the image tube.
Automatic light level rance	500 to one with 50 per cent output change.

Limited Production or Observation Television Cameras

These cameras can be used to produce short instructional sequences not requiring variety in viewing angle or they can be used to observe student teachers interested in evaluating their own performance.

A camera of this type should have a viewfinder. A zoom lens will permit some range of composition and some variation in information presentation. A pan-tilt head should be used and a rolling camera mount is desired in television production. A fixed pedestal can often be used with an observation camera.

Observation cameras should be monochrome unless there is color information in the scene that is of importance to the viewer.

Limited Production or Observation Television Camera Specifications

Equipment to be Provided

Television camera with:
Viewfinder
Internal sync generator
Lens
(Optional-following items needing specifications):
Pan-tilt head
Tripod
Dolly or pedestal
Television monitor and video cable
Television receiver and RF cable
Television lights and stands
Audio equipment
Internal RF modulator

General;

The television camera or camera system to be provided shall meet these specifications and the attached General Television Camera Specifications when assembled and interconnected.

The television camera system shall meet (color or monochrome) specifications.

Special Performance Specifications;

Automatic light level range	500 to one with 50 per cent output change
Lens--focal length	to be specified
Lens--iris range	to be specified
Light level with F2.0 lens	color - 150 FL minimum monochrome - 30 FL minimum
Resolving power	horizontal - 500 lines minimum

Educational Production Studio Television Camera

When interesting and complex television instructional or documentary productions are required, multiple television cameras must be used. These cameras should be interconnected through a switcher-fader so that shots can be joined.

Studio cameras must have viewfinders, zoom lenses, pan-tilt heads and rolling pedestals, dollies or cranes.

Studio production cameras cannot be operated independently but require an external synchronizing generator and may be used with an optional camera control unit.

For production efficiency, each camera, camera control unit and all production personnel should be joined by an interphone party line. Each camera and control position should have talley light indicators to show which camera is being aired.

Educational Production Studio Television Camera Specifications

Equipment to be Provided;

Television camera with:
- Viewfinder
- Lens (to be specified)

(Optional-following items needing specifications):
- Pan-tilt head
- Pedestal
- Television monitor
- Camera control unit
- Television waveform monitor
- Switcher-fader
- Special effects generator
- Television lights and stands
- Audio equipment
- Synchronizing generator

General;

The television camera or camera system to be provided shall meet these specifications and the attached General Television Camera Specifications when assembled and interconnected.

The television camera system shall meet (color or monochrome) specifications.

Special Specifications;

Lens--focal length	to be specified
Lens--iris range	to be specified
Light level with F2.0 lens	monochrome - 20 FL minimum color - 150 FL minimum

Master Antenna Television (MATV) Systems

MATV systems can be used to distribute television signals from ETV, commerical and ITFS stations and CATV, live and video tape sources. Elaborate configurations and fine signal performance required careful engineering design. However, simple systems can be purchased with simple specifications.

As a suggestion, all new school construction should have empty conduit and outlet boxes installed so that preferably two outlets are provided for new or future MATV outlets in each classroom. If the conduit is routed through the walls to adjacent drop ceilings then future connections can be made through the ceilings.

Requests for approvals for MATV facilities shall include:

Floor plans showing outlet locations.
Schematic diagrams of the complete system.
Equipment lists.
Prices of major items and the installation costs - estimated.
Specifications in rough draft

The final specifications should include the following as a minimum:

Floor plans showing outlet locations.
Stations and channels to be delivered.
Equipment list with major components.
Wiring methods and mounting methods.
Signal performance expected.

The following performance specifications are minimum for a MATV system:

Signal voltage at outlets	0 to +20 dbmv
Signal-to-noise ratio	40 db
Signal-to-cross modulation	+35 db
Signal-to-echoes or reflections	+35 db.

Monitor (Special Application), (Micro-Macroscopic Unit)

Minimum picture size: 21"
Minimum of 550 lines of horizontal resolution.
Two video outlets.
Termination switch with "high" and 75 ohm positions.

Receiver (Black and White)

Minimum picture size: 23".

The audio amplifier shall have sufficient output, when new, to furnish an adequate sound level to no less than 30 pupils when the volume control is set at one-third to one-half of its maximum.

It is preferred that the speaker (s) be front-mounted or so constructed as to project the sound directly to the class.

Tone controls should be capable of adjustments necessary to compensate for acoustical variations and/or speech characteristics caused by excessive treble or bass. Audio should be intelligible throughout the seating area without "booming" or "hiss."

Equipment should provide for maximum elimination of screen reflections, safety from burns and electrical shock due to exposed or easily accessible electrical components. Protection of controls and adjustment from pupil manipulation is highly desirable.

Receiver (Color)

The same general requirements as for Receiver (Black and White).

Automatic frequency control and/or automatic gain control.

Receiver Stand or Device

Fixed or mobile, of durable construction and capable of adequately supporting a television receiver at classroom viewing height (approximately 60" to screen center) without danger of tipping.

Castors: 4" minimum on mobile stands.
Optional: yoke-type units for ceiling suspension.

Projector

Minimum picture size capability: 4½ feet x 6 feet.
Power requirement shall not exceed 117 volts, 60 cycles, AC or equivalent.
Audio amplifier output: 8 watts minimum.
Efficient cooling system.
Focus and tilt controls.
Provisions for front or rear projection.
Portable, to provide mobility and flexibility.
Picture brightness shall be adequate for the audience to be served.
Designed for simple operation by unskilled personnel.
Capability to reproduce EIA standard television and audio RF-type transmissions, standard video-type transmissions and closed circuit audio.
Equipped to receive standard VHF and UHF (if required) channels.
All operating channels shall be easily accessible.

Video Tape Recorders (Minimum Recommended Standards)

Category: Refer to: School Administrators' Memorandum 379
dated April 26, 1971
Special Conditions

New and Specialized Equipment

New Equipment

As new equipment is developed for use in the educational media field, it will be considered for approval only after evaluation by appropriate Department of Education specialists and by others whose advice the Department considers pertinent.

The modified standard items shall meet the standards contained herein for such equipment unless otherwise justified in the request.

Minimum Standards

Audio Equipment

Stereo Tape Recorder (Reel to Reel) Record and Playback

Frequency response: 30-18,000 H_z @ 7½ ips.
30-12,000 H_z @ 3 3/4 ips.
Built in Solid State amplifier 20 watts minimum (10 watts per channel).
4 Track 2 Channel
Power: 120V 60 H_z AC. U.L. Listed
Speeds: 3 3/4 and 7½ ips.

Accept 7 inch reels
Fast Forward and Rewind
Positive braking action
Tape counter
2 - VU meters for recording and/or automatic level control

Inputs:

2 - Microphone (1 per channel).
2 - Line (1 per channel).

Outputs:

2 - Line (1 per channel).
2 - 8 ohms.
1 - Female jack for (Stero) headphones.

Two detachable speakers with 6 foot extension cords.
The capability of reproducing includes operational minimum frequency response, volume, tone and balance controls.
Includes: Two dynamic microphones.

Stereo Record Player

Playback unit to have a minimum of four speeds.
Dual-point stereo - turnover pick-up cartridge for standard and micro-groove records.
Accepts up to 12" records
Speakers: Speaker system capable of reproducing 20-20,000 H_z
Amplification: Solid State 40 watts minimum (20 watts per channel).
Must have manual operation capability
Includes adapter for 45 rpm records
Frequency response: 20-20,000 H_z
Plays either stereo or monaural records
Includes: operational volume, tone and balance controls
Power: 120 V 60H_z U.L. listed
Outputs:
2 - Female jacks for 8 ohms speakers
1 - Stereo headphone female jack.

Quadraphonic Equipment

Recording and playback equipment should follow the standards for Stereo Equipment with the addition of, balance controls for four speakers, four channels minimum 10 watts per channel, four micro-phone and line inputs and outputs were required.

Specific Information

Microfilm Readers and Printers

Capability of viewing documents and producing printed materials at least 8½ x 11.

SECTION VI

QUALITATIVE GUIDELINES FOR INSTRUCTIONAL MATERIALS

Strong media collections provide the primary means for teaching, learning, and interest fulfillment. A school's media collection represents the essential information base of the instructional program. Media professionals contribute expertise in evaluating and selecting materials and equipment to the process of building and maintaining adequate collections.

Guiding Principles

1. Every school, regardless of size, has its own collection of materials and equipment. This collection, which is organized and ready for use when the school opens, is developed and expanded on a planned basis.

2. The district and/or intermediate unit provides materials such as 16mm films, professional materials, to supplement collections in the individual schools.

3. Selection of collections is guided by a selection policy formulated by media staff, administrators, consultants, teachers, students, and representative citizens, and adopted by the board of education. The district policy is supplemented by selection and acquisitions guidelines formulated by individual schools within the district.

4. Selection of materials is a cooperative process involving the media staff, curriculum consultants, teachers, students, and community representatives, and is coordinated by the director of the district media program and the head of the school media program respectively.

5. Materials and equipment are evaluated prior to purchase by use of reliable evaluative selection tools and by firsthand examination, wherever possible.

6. Collections are reevaluated continuously to insure that they remain current and responsive to user needs.

7. Organization and arrangement make the collection easily accessible to users.

8. Materials in print, visual, auditory, and tactile formats, with associate equipment constitute the collection.

9. Collections include textbooks and related instructional materials and systems.

10. Current professional materials for faculty and staff use are a part of the collection.

School media personnel assume responsiblity for insuring that users have ready access to the materials and equipment they need or want. That is the essence of media program development, matching interests or desires with one or more of a broad range of media, with confidence in the power generated by

the union of user and material. The special training and skills of media personnel provide leadership in building a relevant, diverse collection, in making it accessible, and in supplying services that enhance the quality of participants' experiences as they relate their involvement in media to their own fulfillment.

The user's first point of convenient access to materials is the center in his own school. No substitute can replace the individual school collection in guaranteeing a high degree of user satisfaction, but it is unrealistic to claim that any school can provide within its own walls all of the materials and equipment that users need. The media staff takes the initiative in obtaining needed information and materials from other sources, using interlibrary loans from other schools, school district media collections, local public libraries, college and university libraries, and regional, state, and national networks.

Sharing of materials among schools is a truly cooperative venture. Leadership emanates from the district media services program, but cooperative approaches in collections development rests upon joint planning in which each participating school assumes responsibility for building strong collections in specific subjects areas and/or for developing specified holdings of periodicals and pamphlets in microform editions, with accompanying provisions for sharing these materials with other schools.

Identification and organization of information on available community resources, both human and material, is another approach by which users needs are satisfied.

Selection Policies and Procedures

Formulation of a district or intermediate unit selection policy which guides the selection of materials and equipment is coordinated by the director of the district media program. This policy, developed cooperatively with representation of media staff, administrators, consultants, teachers, students, and other community members, is adopted by the board of education as official district or intermediate unit policy.

The media selection policy reflects basic factors influencing the nature and scope of collections, such as curriculum trends, innovations in instruction, research in learning, availability of materials and equipment, the increased sophistication of youth, and the rising expectations of teachers and students. It establishes the objectives of media selection, identifies personnel participating in selection and their roles; enumerates types of materials and equipment to be considered with criteria for their evaluation, as well as criteria for evaluating materials in specific subject areas; and defines procedures followed in selecting materials, including initial selection, reexamination of titles in existing collections, and handling challenged titles.

The selection policy reflects and supports principles of intellectual freedom described in the Library Bill of Rights, 6 the School Library Bill of Rights for School Library Media Center Programs, 7 The Students' Right to Read, 8 and other professional statements on intellectual freedom. Procedures for handling questioned materials follow established guidelines and are clearly defined. 9

The district selection policy is supplemented by selection and acquisition guidelines formulated by each school which provides more detailed and specific guidance for decision making in the ongoing selection process as it is applied to building and maintaining its collections.

Basic to effective selection is the establishment of cooperatively developed priorities that consider the existing collection and identifies its strengths, gaps, and pertinency. Selection of materials involves the media staff, administrators, curriculum consultants, teachers, and students with the process coordinated by the head of the school media program.

Building a collection calls for careful planning, an awareness of the school program and the interests, abilities, and problems of the population, broad current knowledge of materials available and the related equipment, and an understanding of the district selection policy and budgeting procedures. It also requires objective judgments, discriminating taste, and a sensitivity to the needs and concerns of learners and teachers. Continuous reassessment, both of the program priorities, and appropriateness of the collection insures an adequate response to changing programs, populations, and opportunities.

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6 The Library Bill of Rights was adopted by the Council of the American Library Association in 1948 and revised in 1967.
7 The School Library Bill of Rights for School Library Media Center Programs was approved by the American Association of School Librarians in 1969.
8 National Council of Teachers of English, The Students' Right to Read (Urban, III,: National Council of Teachers of English, 1972).
9 "Intellectual Freedom and School Libraries; An In-Depth Case Study," School Media Quarterly, 1 (Winter, 1973), 11-35.

Examination and Evaluation of Media

The process of examining and evaluating materials and equipment being considered for purchase is continous and systematic. The district media program supports the selection process by providing examination collections of materials and equipment, arranging for released time for preview and examination of materials, and conducting an active evaluation program involving media personnel, teacher, other staff, and students. Published evaluations, including those in reviews, recommended lists, and standard bibliographic tools are used in selection. Materials and equipment within existing collections are monitored and examined continuously in order to replace worn items and to withdraw out-of-date and inappropriate items.

Regional Collections

A regional media support program (Intermediate Unit-Instructional Materials Services) provides districts and individual schools additional materials or equipment which meets one or more of the following criteria:

Regional Collections -continued

too expensive for the school or district to afford in sufficient quantity i.e. 16mm films, master video tapes, master audio tapes

cost efficiency and instructional effectiveness must be used to determine these types of materials

infrequently used at the district level

teacher inservice materials

preview materials

equipment loaned when equipment is being serviced

District Collections

The school district through the district media program provides for individual schools additional materials or equipment which meets one or more of the following criteria:

too expensive for a school to afford in sufficient quantity, i.e. video tapes, art collections infrequently used materials or equipment

needed on a temporary basis, e.g., equipment to replace school-owned equipment being repaired

provided for examination and consideration for purchase, e.g. new materials and equipment included in a district educational media selection center

Professional Materials

The district professional library provides administrators, curriculum consultants, teachers, media professionals, and other district and school staff convenient access to professional materials. These materials are necessary to keep professionals informed of trends, developments, techniques, research, and experimentation in general and specialized areas of education. It includes works in such related subjects as communications, sociology, anthropology, behavioral pyschology, the humanities, linguistics, and philosophy, Information sources may include books and pamphlets, government documents, journals, films, filmstrips, videotapes, and audio tapes. The collection of professional materials provided at the district level is complemented by smaller working collections in individual schools.

The professional library also includes the following types of resources:

curriculum materials, including courses of study, curriculum guides, resource units, and teachers' manuals

selection tools that index, evaluate, and review instructional materials.

television and radios program guides and manuals

indexes of community resources including catalogs and brochures of sites of educational value and field trip evaluations

information on teachers' organizations and associations, forthcoming meetings, and programs for continuing education

Media Selection and Evaluation Center

The district media program supports the selection of materials and equipment by individual school media programs. It provides examination collections of materials and equipment, arranging for released time for school personnel to preview and examine materials, and conducts an active evaluation program that involves media personnel, teachers, curriculum consultants, and other users. (In smaller districts the intermediate unit can fulfill all or part of this function.)

In the book, Guide to the Development of Educational Media Selection Centers, the media selection center staff facilitates the evaluation process through these activities:

"collection and organization of materials for examination

capture and dissemination of published evaluations of media

development and provision of improved criteria and data forms to gather responses from users...

arranging for user evaluations (assignment of persons and media, assistance and guidance)

collecting and organizing the resulting data and dissemination of the findings on a timely basis" 10

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10 Bomar, Coral Paul, and others, Guide to the Development of Educational Media Selection Centers, ALA Studies in Librarianship, no. 4 (Chicago: American Library Association, 1973), p. 30.

School Collections

The collection in each school is rich in breadth and depth of content and represents varied types of materials, points of view, and forms of expressions. It provides a broad range of media formats and meets the requirements of all curriculum areas, accommodating diverse learning skills and styles of users at varying maturity and ability levels.

Funds provided for media center collections are sufficient to enable the school media program to meet accepted standards for the collection, secure additional materials and equipment needed for changing curricula and student populations, and maintain the collection in satisfactory condition.

Capital outlay funds provided for new schools establish initial collections ready for use when the school opens. Allocations, in addition to the usual operating funds, are essential to expand collections in new and reorganized schools. Higher than average per pupil allocations are required for schools with small enrollments, changing needs, or special programs that require extensive materials and resources.

The primary factors in building a school media collection are the requirements of the instructional program and the needs and interests of users. Budgeting practices provide for flexibility in the choice of media formats, with proper relationships rationally derived between collections, staff requirements, and physical facilities, particularly space required for the use and storage of materials and equipment. Other considerations include the packaging or repackaging of items to increase durability, assembling kits of materials complementing each other, and transferring content from one format to another.

A single model for the collection of materials and equipment is not presented here since decisions concerning amounts of materials, their formats, and quantities of supporting equipment are made on the basis of program and user needs. However, careful research has identified base quantities of materials and associated equipment needed to insure adequate provisions for content coverage, range in levels, and choice of media formats, responding to general information needs and personal interests and preferences, (SEE SECTION VII).

SECTION VII

QUANTITATIVE GUIDELINES FOR INSTRUCTIONAL MATERIALS

Introduction

It is recommended that a school with 500 or fewer students has a minimum collection of 20,000 items or 40 per student. An item is defined as a book (casebound or paperback), film, videotape, filmstrip, transparency, slide, periodical subscription, kit, and any other form of material or associated equipment. It is possible that the collection in larger schools may provide the needed range in content, levels, forms of expression, and formats at a ration less than 40 items per student.

It is recognized that additional instructional materials must be acquired to supplement items provided within the individual school. Access to additional collections is recommended, and can be achieved only through arrangements designed to guarantee availability of a broader choice of media. An example is the replanning for the school population to use a public library that has both breadth and depth in its collections. Cooperative relationships that prescribe both the means by which to implement interlibrary loans and the measure of the adequacy of such provisions are essential. Similarly, planning for the use of any community, school district, or intermediate unit resources should include adequate guarantees for a high degree of satisfaction of user's needs.

Films, Videotapes, and Related Collections

Through its own collection or through participation in an intermediate unit instructional materials services, the district media service program provides access for individual schools to at least 3,000 titles, with sufficient duplicate prints to satisfy 90 per cent of all requests on requested date. This is a minimal figure and there should be access to additional titles to in excess of 6,000 titles. In addition, sufficient funds are provided for purchase and/or rental of new and specialized titles as needed throughout the year. Selection of materials in 16mm or video format is based on quality of image, utilization mode, size of intended viewing audience, availability of materials and equipment, and cost of change-over from one format to the other.

Base Collection Recommendation

The recommended base collection for the media services programs in the individual school follows, with accompanying suggestions for achieving excellence in meeting user needs. The total number of items in the lower range is less than the recommended minimum of 20,000 items, while the total number in the higher range is greater. Final decisions about the mix of materials, including actual quantities in each category, are made in the individual school. The development of the media collection is based on program goals and characteristics of the school and reflects needs, prior action, and response. The chart that follows shows a continuum leading to excellence in meeting student needs.

COLLECTIONS: RECOMMENDATIONS FOR MEETING USER NEEDS

BASE COLLECTION IN THE SCHOOL	EXTENDED PROVISIONS
Note: Base recommendations are presented for a school with 500 or fewer users, and represent items located within the school.	Note: Recommendations for access to collections beyond the school call for planned arrangements that guarantee a high degree of user satisfaction.
TOTAL COLLECTION	
At least 20,000 items located in the school or 40 items per user	There is no limit to potential user need and therefore no justifiable quantitative limit to the size of a collection. Beyond the recommended base, the budget permits expansion of the collection when needs arise. The media staff obtains for users additional items available from local, regional, state and federal agencies.
PRINT MATERIALS: BOOKS, PERIODICALS AND NEWSPAPERS, PAMPHLETS, AND MICROFORMS	
Books	
8,000 to 12,000 volumes, or 16 to 24 per user	Access to 60,000 titles to insure satisfaction of 90 percent of initial requests.

Considerations in making choices:

1. The collection provides for subject, interest, and reference coverage, multiple reading and maturity levels in each subject areas, and representation of varying points of view.

2. Titles are selected on the basis of such established elements of evaluation as appeal and value for users, accuracy, currency, style, quality of format and instructional design.

3. Sufficient duplication of titles is provided to satisfy user demands.

4. Paperback books are purchased to satisfy heavy demands for particular titles; to provide less-used titles in an expensive format; and to respond to user perferences.

BASE COLLECTION IN THE SCHOOL	EXTENDED PROVISIONS

Periodicals and Newpapers

50 to 175 titles	Access to research capability in periodical/newspaper literature, by purchasing microform collections, photocopying, and/or interlibrary loan.

Considerations in making choices:

1. The collection supports the curriculum, caters to the interests of users, represents differenct points of view, and provides intellectual and aesthetic stimulation.

2. Appropriate indexes are provided for magazine and newspaper holdings.

3. Magazines and newspapers that contribute to satisfaction of user needs are considered for acquisition although they may not be indexed.

4. Back issues of selected periodicals are readily available in the media center. Holdings that extend back more than five years are retained, discarded, or replaced by microform editions, according to needs.

5. Local, state, national, and international newspapers are represented in the collection.

6. Duplicate copies are provided for periodicals in heavy demand.

Pamphlets

The type and quantity vary according to program needs.	Use of depository libraries provides access to extensive holdings of government documents.

Considerations in making choices:

1. The collection includes state, national, and international government documents, which represent important sources of information.

2. Items in the collection are useful, current, and varied in points of view.

3. Persons or organizations responsible for the publication are clearly identified on items included in the collection.

4. Free and inexpensive materials, selected with care, are included as appropriate. Simplified order procedures permit rapid acquisition of free and inexpensive materials.

5. Much time and effort are required to maintain and index a clipping file; preferred alternatives include increasing periodical subscriptions and/or indexes and use of commercial clipping services, if needed.

BASE COLLECTION IN THE SCHOOL	EXTENDED PROVISIONS
Microforms: Microfilm, Microcard, and Microfiche	
Types and quantity vary with program needs.	User access to extensive microform data bases, e.g., Educational Resources Information Center (ERIC), Human Relations Area Files (HRAF), etc. Cooperative approaches among schools in collection building, with accompanying arrangements for interlibrary loans and/or photocopying. Use of Intermediate Unit as regional resource should be considered.
Visual Materials: Still Images	
Filmstrips, sound and silent	
500 to 2,000 items, or 1 to 4 per cent	Access to sufficient items to insure satisfaction of 90 per cent of initial requests. In individualized programs in which students work with this format, a collection of 5,000 items is recommended.

Considerations in making choices:

1. Filmstrips meet accepted criteria for accuracy and scope of content, organization, and technical qualities. In addition, they have user appeal and are appropriate in treatment for the intended use, i.e., self-directed use or teacher presentation.

2. Sound filmstrips selected for the collection have appropriate relationships between visual and auditory content.

3. Packaging of the filmstrip (s) and related materials is convenient for effective use and storage. Choices between alternative formats for audio reproduction are based on the same considerations.

Slides and Transparencies	
2,000 to 6,000 items, or 4 to 12 per user	Access to 15,000 items including specialized subject collections, as needed in relation to instructional and user interests.

Considerations in making choices:

1. Slides and transparencies are evaluated carefully for accuracy and technical qualities including color, mounting, and (in the case of art slides) fidelity to the original. Legibility for the viewer is essential.

BASE COLLECTION IN THE SCHOOL	EXTENDED PROVISIONS

2. High selectivity is exercised in the purchase of sets of transparency masters.

3. Locally produced slides and transparencies are added to the collection when they meet criteria for quality and need.

4. Appropriate storage for single slides and sets of slides is provided.

Graphics: Posters, Art and Study Prints, Maps and Globes

800 to 1,200 items	Additional items to respond to program needs, with provision for original art, children's art, and loans of circulating collections from museums.

Considerations in making choices:

1. Fidelity of reproduction to original art work, including sharp focus and accurate color, is essential in collections of posters and art prints.

2. The collection includes examples of varied reproduction processes.

3. Items within a set of posters or prints are evaluated individually in order to determine the contribution and impact of the set as a whole.

4. Selection of maps and globes takes into account such factors as the following:

   true sizes and relationships of hemispheres are represented only through globes;

   the larger the globe size, the greater the detail that can be shown;

   illumination of globes is minimally preferable;

   topographic and road maps of local areas are included in the collection;

   some maps may be provided in alternative formats, e.g., transparencies and microforms.

5. Criteria applied in evaluation of maps and globes include currency of features; appropriateness of scale; quality of drafting, engraving, and printing; clearly executed design that avoids confused appearance; clear letter face.

6. Consideration is given to appropriate processing and storage of materials in fragile formats by such means as laminating, mounting, of framing items.

BASE COLLECTION IN THE SCHOOL	EXTENDED PROVISIONS

Visual Materials: Moving Iamges

16mm and Super 8mm Sound Films, Video Tapes, and Television Reception

Access to a minimum of 3,000 titles, with sufficient duplicate prints to satisfy 90 per cent of all requests.

In addition, sufficient funds for rental of specialized films, including feature-length films.

Access to additional titles up to a total in excess of 6,000 titles, from Intermediate Units, may be desirable.

Considerations in making choices:

1. Selection of 16mm or Super 8mm sound film or video (open reel, cassette, and cartridge) format is based on consideration of quality of image, utilization mode, size of viewing audience, availability of materials and equipment, and cost of change-over from one format to the other.

2. Centralized collections of materials provided at the intermediate unit level supply materials in sufficient depth to satisfy 90 per cent of users' requests.

3. To serve the needs of film study programs, collections include frequently-used feature films acquired on a long-term loan or purchase basis and/or make provisions for obtaining such films through a cooperative program.

4. Collections include materials produced by students and staff that meet criteria for quality and need.

5. Acquisition of Super 8mm sound films and projectors is based on careful evaluation of capability to reproduce sound and availability of appropriate materials and equipment.

6. Satisfactory condition of materials in assured by a maintenance and distribution system that checks, rewinds, cleans, and repairs each item after use.

7. Collections are evaluated continously to identify materials requiring replacement and to withdraw obsolete items.

Super 8mm Films, Silent

500 to 1,000 items, or

1 to 2 per user

Access to 4,000 titles from the individual school's collection, other schools, and a supplementary collection at the district level.

Development of specialized subject collections to be shared by individual schools is recommended.

BASE COLLECTION IN THE SCHOOL	EXTENDED PROVISIONS

Considerations in making choices:

1. Materials selected meet appropriate standards in projected image quality in relation to size of intended audience.

2. Selection takes into consideration content areas--such as the sciences, physical education, and instructional education--which this format offers potential strenghts, e.g., short lengths, repeatability, and ease of use of cartridge-loaded films.

3. 8mm films produced by students and staff are incorporated in the collection on the basis of quality and need.

4. Both cartridge-loaded and open-reel films are considered for acquisition.

5. Consideration is given to standardization of Super 8mm formats used within a school and among schools sharing materials.

Auditory Formats

Audio Recordings: Tapes, Cassettes, Discs, and Audio Cards

1,500 to 2,000 items, or

3 to 4 per user

Access to 5,000 items from the individual school's collection and intermediate unit sources.

Considerations in making choices:

1. Auditory formats, offering content ranging from music to documentaries to drill materials, promote individualized development of listening skills and aural literacy.

2. Materials selected meet high standards in quality of audio reproduction, insuring intelligibility to the user.

3. Materials selected are evaluated for adequacy in fidelity, full frequency, and non-distortion of the original sound.

4. In choice of format (s), consideration is given to ease of use, availability of materials, and ability to produce recordings locally.

5. Blank tapes are provided for production of recordings by users and staff.

Educational Broadcast Radio

Access to specialized programs through public-service broadcasting and through special sources, e.g., university and state agencies.

BASE COLLECTION IN THE SCHOOL	EXTENDED PROVISIONS

Considerations in making choices:

1. The media program identifies, obtains, and makes available to users program information, including guides and manuals when available from producers of educational broadcasting programs.

2. In districts that provide a broadcasting station access to sub-channel carriers for instructional purposes is considered.

Tactile Formats

Games and Toys

400 to 750

Access to a sizable district-level collection.

Computer access from the district level may be provided for use with simulation games.

Considerations in making choices:

1. Collections include materials chosen to augment the curriculum and to stimulate user interest.

2. Both commercially produced and locally developed games and toys are considered for inclusion in the collection.

3. Selection criteria emphasize a high degree of aesthetic appeal that invites handling of the objects in the process of use.

4. The collection includes materials for individual as well as group use.

5. Games and toys are repackaged as nceessary to promote convenience, durability, and appeal in intended use.

Models and Sculpture

200 to 500 items

Access to sizeable collections available from the school district and other agencies, including community resources.

Considerations in making choices:

1. Models and sculpture reproductions exhibit a high degree of verisimilitude.

2. Items selected are sufficiently sturdy to withstand handling and examination by users.

BASE COLLECTION IN THE SCHOOL	EXTENDED PROVISIONS

Specimens

200 to 400 items

Access to larger collections available from the school district and other agencies, including loan collections from zoos and museums.

Considerations in making choices:

1. The collection makes adequate provision for specimens of long-term use, short-term use, and those which may be expendable.

2. Preserved specimens are selected with consideration for exactitude of representation and motivational appeal to the user.

3. Use of live specimens, where permitted, conforms with care to the rules and recommendations of humane societies.

Instructional Systems, Including Textbooks

Types and Quantities vary with program needs

Considerations in making choices:

1. Choices in instructional systems range from series of textbooks to multimedia packages of instructional materials to complex systems that combine materials and equipment in a program designed to meet precisely defined instructional objectives.

2. Emphasis is placed on the provision of a variety of instructional materials, including basic and supplementary texts and other instructional programs.

3. The organization, housing, distribution, and inventory of instructional systems, including textbooks, is recommended as a function of the school media program. This function requires the provision of one or more media aides, as needed, working with media professionals and teachers. In cases where instructional systems that include extensive hardware components are employed, a media technician may be needed to keep instructional equipment operating on a continous basis. In addition, media center facilities will require adequate space for housing instructional systems.

4. Textbooks and other instructional programs may be assigned to individual classrooms or other locations within the school for extended periods of time. Instructional packages that include a variety of materials used by students individually as well as in classrooms are housed in media centers, for maximum accessibility (except as they may be assigned to classrooms for periods of time).

5. Media professionals participate with classroom teachers, curriculum consultants, and other staff in the selection of appropriate instructional systems.